

pigment-circulation. The discharge of pigment, however, is something different and possibly capable of a very different interpretation.

Is the discharge normal or abnormal? Is it a result of extraordinary conditions under which the animal is placed in confinement in our aquaria, or is it an habitual mode of protection? It seems to me that the latter interpretation will best satisfy our limited knowledge; and although when the bracts are broken the discharge is more voluminous, since the glands are wholly emptied of their contents, the method of its discharge shows it to be a function which is perfectly normal.

It seems to me that we have in these "glands" the homologues of nematocysts, the thread of which is wanting and the cells of the interior of which have degenerated or rather specialized into pigment-bodies, instead of functioning as an urticating-thread. These modified nematocysts throw off a coloured fluid which, while it serves in a similar way in protection or in killing its prey, bears little morphological likeness to the well-known lasso-cell.

XLV.—*On the so-called Cretaceous Lizard*, *Rhaphiosaurus*.

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IN 1840 Prof. Sir Richard Owen described a small portion of mandible from the Lower Chalk of Cambridgeshire under the name of *Rhaphiosaurus* \*, regarding the fossil as referable to a Lacertilian Reptile and provisionally associating with it a series of undoubted Reptilian vertebræ from the Lower Chalk of Burham, Kent. Ten years later the vertebræ proved to pertain to a distinct generic type named *Dolichosaurus* †; and the original jaw thus remained as the sole evidence of the existence of *Rhaphiosaurus*. In 1865 Prof. Seeley ‡ stated incidentally that the specimen so determined probably belonged to a fish; and still more recently the genus has been recorded§ as one requiring further elucidation.

\* R. Owen, "Description of the Vertebral Column &c. of a small Lacertine Saurian from the Chalk," Trans. Geol. Soc. [2] vol. vi. (1840) p. 413, pl. xxxix. fig. 3. *Rhaphiosaurus subulidens*, Owen, Brit. Assoc. Rep. 1841, p. 190. *R. lucius*, Owen, in Dixon's 'Geol. Sussex' (1850), p. 385, pl. xxxix. figs. 1-3. *R. subulidens*, Owen, "Foss. Rept. Cret. Form." (Pal. Soc. 1851), p. 19, pl. x. figs. 5, 6.

† R. Owen, "Foss. Rept. Cret. Form." (Pal. Soc. 1851), p. 22.

‡ H. G. Seeley, Ann. & Mag. Nat. Hist. [3] vol. xvi. p. 145.

§ Smith Woodward, "A Synopsis of the Vertebrate Fossils of the English Chalk," Proc. Geol. Assoc. vol. x. (1888) p. 281.

The fossil in question was discovered by Mr. James Carter, F.R.C.S., and presented by him to the Woodwardian Museum, Cambridge; and, through the kindness of Prof. Hughes, the present writer has lately had the privilege of examining and comparing the specimen with fossils in the British Museum. As a result of the study it may be definitely asserted that "*Rhaphiosaurus*" is founded upon the anterior half of the dentary bone of a small species of the characteristic Cretaceous fish, *Pachyrhizodus*, and the resemblance of the dentition to that of the pleurodont lizards is merely a case of analogy.

The jaw exhibits the characteristic fibrous texture of fish-bone, and the dentition is such as might from present knowledge be assigned either to fish or reptile; the bone does not taper anteriorly, but, when viewed from beneath\*, it shows the marked inflexion at the symphysis observed in all species of the genus just mentioned. The arrangement of the teeth agrees precisely with that described by Cope † and the present writer ‡ in *Pachyrhizodus*; and the dentition is so closely paralleled by that of a maxilla in the British Museum associated with scales and detached bones (no. P. 1808), that there can be no doubt as to the generic determination. With regard to its specific characters, the slenderness and form of the dentary bone are sufficient to distinguish it from all described species of *Pachyrhizodus*, and it may therefore retain the name of *subulidens* originally proposed by Owen. The British Museum fossil just mentioned is also interesting as extending the known range of the form to the Chalk of Sussex.

The intricate history of the acquisition of our knowledge of *Pachyrhizodus* has already been summarized and discussed in the 'Synopsis' quoted above. Other supposed Saurians—*Mosasaurus gracilis* and *Acrodonosaurus Gardneri*—have likewise been recorded through a misinterpretation of portions of jaws of this great predaceous fish; and it is unfortunate to have to add one more of the few Reptilian generic names in the list from the European Chalk to the synonymy of the same deceptive generic type.

\* Pl. xxxix. fig. 1, in Dixon's 'Geol. Sussex.'

† E. D. Cope, "Vertebrata of the Cretaceous Formations of the West" (U. S. Geol. Surv. Territ. 1875), p. 220.

‡ Smith Woodward, *loc. cit.* p. 313.